Wood Anatomy of the Neotropical Sapotaceae. IX. Pseudoxythece.

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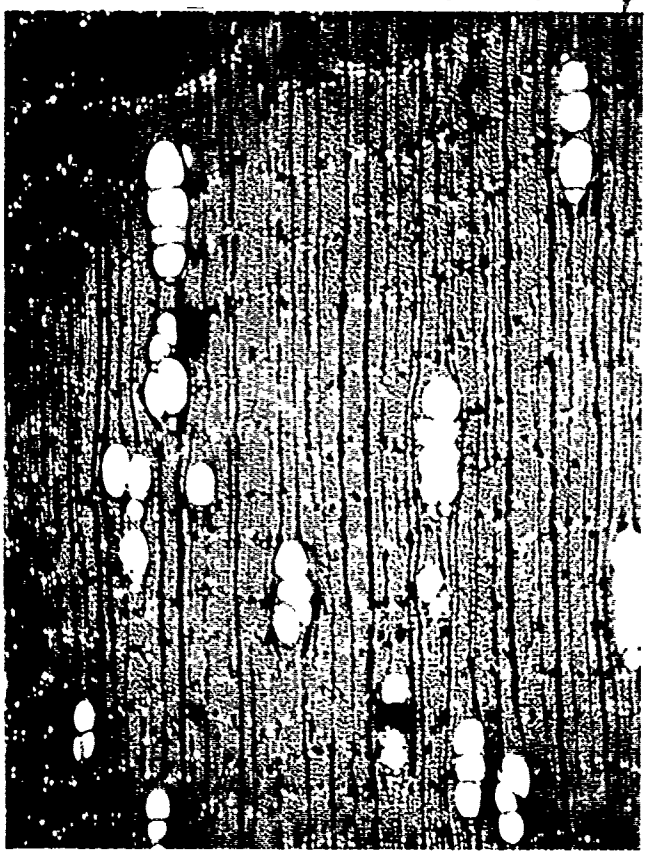

Abstract

Pseudoxythece ambelaniifolia (Sandwith) Aubreville is the sole representative of this genus established by Aubreville in 1972. Floristically and anatomically, its affinities are with *Neoxythece* (*Oxythece*). Whether it can be maintained as a distinct taxon remains to be determined.

Preface

The Sapotaceae form an important part of the ecosystem in the neotropics; for example, limited inventories made in the Amazon Basin indicate that this family makes up about 25 percent of the standing timber volume there. This would represent an astronomical volume of timber but at present only a very small fraction is being utilized. Obviously, better information would help utilization--especially if that information can result in clear identification of species.

The Sapotaceae represent a well-marked and natural family but the homogeneous nature of their floral characters makes generic identification extremely difficult. This in turn is responsible for the extensive synonomy. Unfortunately, species continue to be named on the basis of flowering or fruiting material alone and this continues to add to the already confused state of affairs.

This paper on *Pseudoxythece* is the ninth in a series describing the anatomy of the secondary xylem of the neotropical Sapotaceae. The earlier papers, all by the same author and under the same general heading, include:

I. Bumelia--Research Paper FPL 325
II. Mastichodendron--Research Paper FPL 326
III. Dipholis--Research Paper FPL 327
IV. Achrouteria--Research Paper FPL 328
V. Calocarpum--Research Paper FPL 329
VI. Chloroluma--Research Paper FPL 330
VII. Chrysophyllum--Research Paper FPL 331
VIII. Diploon--Research Paper FPL 349

Publication in this manner will afford interested anatomists and taxonomists the time to make known their opinions and all such information is hereby solicited. At the termination of this series the data will be assembled into a single comprehensive unit.

WOOD ANATOMY OF THE NEOTROPICAL SAPOTACEAE:

IX. *PSEUDOXYTHECE*

By

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Introduction

The genus *Pseudoxythece* was described by Aubreville (1) in 1972 and consists of the single species *P. ambelaniifolia* (Sandwith) Aubreville. Originally, this species was described in 1931 as *Chrysophyllum ambelaniifolium* Sandwith. When Cronquist (2) monographed the neotropical species of *Chrysophyllum*, this species was excluded and transferred to the genus *Oxythece* where it became *O. ambelaniifolia* (Sandwith) Cronquist. The basis for the foregoing is the Sandwith collection No. 372 (Forest Dep. 1196) made in Guyana.

Aubreville and Pellegrin had previously (1961) established the genus *Neoxythece* and reduced *Oxythece* to synonomy, moves which then necessitated a differentiation between *Neoxythece* and *Pseudoxythece*. To this effect, Aubreville (1) states that the two genera are very close "S'en distingue par une structure particuliere de la corolle et de l'androcae." Whether these floral differences are of a magnitude to be reflected in the wood anatomy has yet to be determined. It is of interest to note, in this respect, that while Aubreville's description for *Pseudoxythece* states that staminodes are absent, in his key to the genera, the first alternate of No. 24, this genus would key out under staminodes regularly present. *Neoxythece* keys out under the second alternate of No. 24, staminodes very irregularly present or lacking.

1/ Pioneer Research Unit, Forest Products Laboratory.

2/ Maintained at Madison, Wis., in cooperation with the University of Wisconsin.

Description

Based on three wood specimens from the type tree, Sandwith 372 (Forest Dep. 1196) collected in Guyana (SJRw 32880, 43581, and MADw 4730).

General: Wood brown; planed surfaces with slight luster. No distinction in color between heartwood and sapwood. Growth rings indistinct or lacking. Wood very heavy with an average specific gravity of 1.10.

Anatomical:

Pores groups in diffuse to echelon arrangement; widely spaced (fig. 1). Pores commonly in radial multiples of 2-4(5); solitary pores few. Multiples appearing longer will be found to consist of short multiples separated by vascular tracheids. Maximum tangential pore diameter observed was 173 μm.

Vessel member length averages 820 μm. Inter-vessel, pit-pair diameter approximately 6 μm. Perforations simple. Tyloses, when present, thick-walled or sclerotic.

Axial parenchyma banded and irregularly 1-2 seriate (fig. 2); the cells with or without colored contents. Cells with yellow-brown contents contain spheroidal particles of silica which may attain a diameter of 26 μm. Crystals lacking.

Wood rays predominantly uniseriate and, when biseriate, this portion generally less than five cells high; heterocellular. Vessel-ray pitting irregular in shape and size. Silica common and confined to those cells with yellow-brown contents; the silica particles largest in the square, marginal cells. The silica particles are largest in those portions of the wood rays adjacent to the axial parenchyma. Crystals lacking.

Wood fibers very thick walled; vascular tracheids common. Average fiber length 1.96 mm.

Diagnostic features: Wood brown with slight luster; very heavy. Under a hand lens the pores appearing in relatively long multiples which are widely spaced and produce a diffuse condition. Axial parenchyma and wood rays with yellow-brown contents containing silica. Silica content established by chemical analysis of 1.00 percent or, for a wood of this specific gravity, containing 0.01109 grams silica per cc.

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Literature Cited

1. Aubreville, A.
   1972. The Botany of the Guyana Highlands. IX. Basset Maguire and collaborators. Memoirs New York Bot. Gard. 23:219.

2. Cronquist, Arthur.
   1946. Studies in the Sapotaceae. V. The South American species of Chrysophyllum. Bull. Torrey Bot. Club 73(3):310.

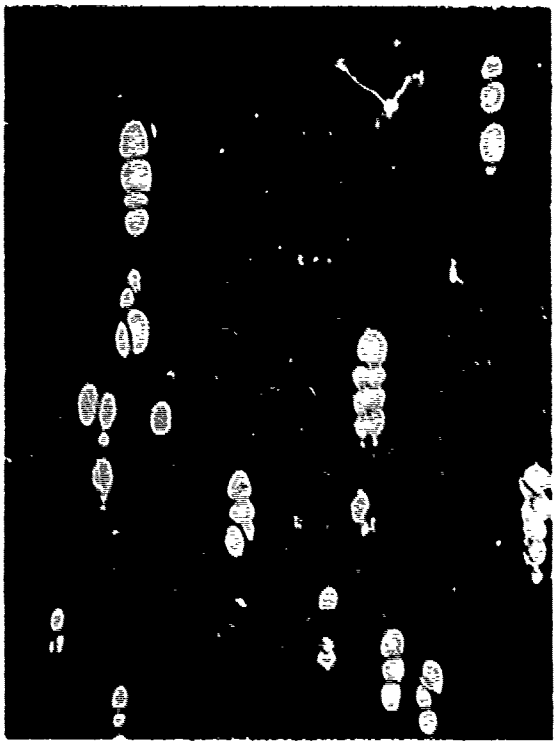

Figure 1--Pseudoxythece ambelaniifolia, typical pore and parenchyma arrangement X30.

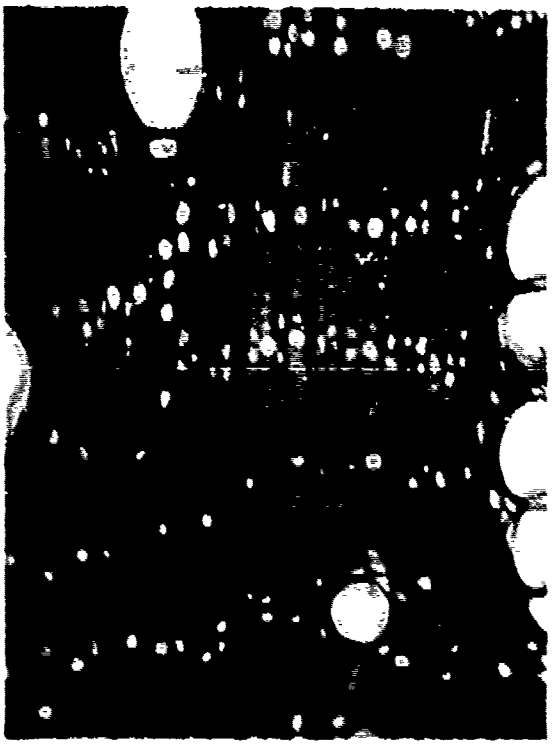

Figure 2.--P. ambelaniifolia, parenchyma detail X110.